AMENDMENTS TO THE SPECIFICATION

Replace paragraph [0001] with the following:

[0001] This application is related to copending U.S. Patent Application Serial No. [[__________]] 10/665,317, titled "Statistical Analysis for Implantable Cardiac Devices" ~~(Attorney Docket No. A03P1064)~~, filed ~~concurrently herewith~~ September 17, 2003.

Replace paragraph [0070] with the following:

[0070] The plot 510 exhibits a ventricular stimulus (VS) at approximately 0 ms, wherein the stimulus has a magnitude of Y_S mV and a duration of approximately [[□]] Δt_{VS} ms. The corresponding afterpotential plot 520 exhibits a rise to Y_{AP} mV at approximately 0 ms. The ventricular IEGM plot 530 exhibits a ventricular stimulus at approximately 0 ms and a corresponding blanking period (e.g., [[□]] Δt_{BP} ~ 16 ms). A blanking period is typically an interval initiated by the delivery of a stimulus during which sensing (e.g., a sense amplifier) is temporarily disabled. In dual-chamber pulse generators, a blanking period may also prevent inappropriate detection of signals from another chamber (e.g., crosstalk). Blanking periods are not available in all pacing devices and the blanking period, typically stated in milliseconds, may be preset or programmable. Note that the afterpotential plot 520 does not include a blanking period; however, if it did, the afterpotential would, for example, rise from the baseline (e.g., 0 mV) at approximately the end of the blanking period, typically to a level less than approximately Y_{AP} mV. Also note that the afterpotential may appear inverse to that shown in Fig. 5, for example, due to sensing polarity, etc.

Replace paragraphs [0073] and [0074] with the following:

[0073] Referring to Fig. 6, exemplary atrial information 600 is shown. The exemplary atrial information 600 includes a plot of atrial stimulus voltage versus time 610, a plot of afterpotential voltage with respect to time 620 and a plot of sensed activity with respect to time 630. The exemplary time scale in the plot 630 illustrates that atrial activity typically occurs in a post-stimulus time frame of approximately less than one

hundred milliseconds. Other events, such as the stimulation pulse width (e.g., [[□]] Δt_{AS} ~ 0.5 ms) of the plot 610 and/or the afterpotential rise and decay of the plot 620 are also exemplary and may not correspond precisely to the time scale of the plot 630.

[0074] The plot 610 exhibits an atrial stimulus (AS) at approximately 0 ms, wherein the stimulus has a magnitude of Y_S mV and a duration of approximately [[□]] Δt_{AS} ms. The corresponding afterpotential plot 620 exhibits a rise to Y_{AP} mV at approximately 0 ms. The atrial IEGM plot 630 exhibits an atrial stimulus at approximately 0 ms and a corresponding blanking period (e.g., [[□]] Δt_{BP} ~ 4 ms). Note that the afterpotential plot 620 does not include a blanking period; however, if it did, the afterpotential would, for example, rise from the baseline (e.g., 0 mV) at approximately the end of the blanking period, typically to a level less than approximately Y_{AP} mV. Also note that the afterpotential may appear inverse to that shown in Fig. 6, for example, due to sensing polarity, etc.

Replace paragraph [0086] with the following:

[0086] Referring to Fig. 9, exemplary analyses 900 of afterpotential information are shown. An exemplary stimulus 910 with respect to time includes a stimulus having a maximum amplitude of X mV and duration of [[□]] Δt ms. An exemplary ensemble average 920 includes a maximum amplitude Y_{AP} mV at a time of approximately t_{AP} ms. Various exemplary equations 930 are also shown which are optionally suitable to analyze afterpotential information. For example, the exemplary ensemble average afterpotential 920 decays substantially exponentially from the time t_{AP} onward. Thus, Equation 2, below, is optionally suitable to model the ensemble average 920:

$$Y(t) = Y_{AP}\, EXP[-bt] \qquad (2),$$

wherein b is a time constant (e.g., function of X,Δt, etc.) and Y_{AP} is optionally a function of stimulus parameters (e.g., X, Δt, etc.). Through use of such an equation, information contained in the afterpotential ensemble average 920 is reduced to a few parameters (e.g., Y_{AP} and b) which may depend on a few variables (e.g., X, Δt, etc.).

Replace paragraph [0092] with the following:

[0092] In general, an evoked response, in the case of capture, exhibits little variability with respect to suprathreshold stimulus power; whereas, afterpotential is known to vary with respect to stimulus power. Thus, according to various exemplary methods and/or devices described herein, a stimulus power dependent afterpotential (e.g., the waveform 1220) is subtracted from an ensemble average IEGM (e.g., the waveform 1210) and the result (e.g., the waveform 1240) is compared to a known ensemble average evoked response, which has already had afterpotential artifact removed and/or was acquired using techniques (circuitry, algorithms, etc.) to remove afterpotential artifact. Of course, the result (e.g., the waveform ~~1340~~ 1240) is optionally analyzed according to another technique in addition to, or in lieu of, comparison to a known ensemble average waveform (e.g., derivative, integral, etc.).